

**FOOD SCIENCE AND DIETETICS 2  
(FOOD SCIENCE TECHNOLOGY AND NUTRITION 2)  
ACTIVITIES**

**A. SAFETY AND SANITATION**

**1. Incorporate safe use of lab equipment.**

- Sign food safety and conduct contract and file contract (parents, students signatures).
- Score 90% on safety test.
- Discuss and quiz students on lab safety.
- Prepare first aid supplies, personal and emergency protection equipment or supplies.
- Recognize common laboratory hazards.
- Locate a Materials Safety Data Sheet and/or fire extinguishers.

**2. Integrate safe lab techniques and procedures.**

- Inspect handwashing skills using glo-germ.
- Discuss appropriate use of equipment.

**3. Implement sanitation practices in the workplace.**

- Practice aseptic techniques.
- View video on universal precautions.
- View the ServSafe video.
- Sterilize reagents and equipment.
- Evaluate safety and sanitation procedures when receiving, preparing, serving, and storing food.

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**B. SCIENTIFIC EVALUATIONS**

- 1. Explain why scientific equipment was required for scientific investigations.**
  - Compare the accuracy of using a measuring cup, beaker, and a graduated cylinder.
  - Role play instances when scientific equipment is not used and the effect on scientific investigations.
  - Conduct different kinds of scientific investigations.
  - Review and analyze scientific investigations
- 2. Analyze methods used and factors involved in the scientific processing of foods.**
  - Use scientific method to analyze foods.
  - Complete a lab.
- 3. Investigate the relationship between matter and foods.**
  - Test pH in common food ingredients.
  - Identify various states of matter: solids, liquids, and gases.
  - Read food labels and identify various states of matter.
  - Take 10-12 items and classify as types of matter (pure substance, mixtures, compounds, etc.).
- 4. Implement the scientific method.**
  - All labs and activities will be conducted using the scientific method.
  - Make chart showing the steps of the scientific method.
  - Show proper and improper procedures in an experiment given examples of both.
  - Use checklist to evaluate the scientific method.
- 5. Evaluate foods using the sensory process.**
  - Conduct scientific sensory evaluations of food: blindfold taste tests.
  - Perform odor recognition tests.
  - Conduct scientific sensory evaluations of food, e.g., use yogurt or cookies to determine mouth feel and color.
- 6. Verify that basic scientific principles were used in experiments.**
  - Checklist evaluation by peers

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**C. METABOLISM**

- 1. Analyze the metabolic impact of nutrients on the body.**
  - Create daily meal plan for various caloric intakes.
  - Construct a life-size model of the human digestive system and trace the pathway of a hamburger through the digestive system.

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**D. FOOD CHEMISTRY**

- 1. Analyze the properties and uses of water.**
  - Investigate the use of diuretics.
  - Demonstrate the characteristics of gas in a water solution.
  - Compare the density of ice and water.
  - Demonstrate impact of mineral ions in water.
- 2. Analyze enzyme reactions in foods.**
  - Enzymatic browning
  - Using peroxide to test for the stopping of enzyme reactions
- 3. Analyze the function of acids and bases in foods using the pH scale.**
  - Compare shelf life of food based on pH.
- 4. Differentiate the functions of the nutrients.**
  - Create a multimedia presentation on the functions of the nutrients.

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**E. FOOD MICROBIOLOGY**

**1. Investigate the process of fermentation.**

- Make Kim Chee.
- Make yeast bread.
- Bacterial Fermentation tasting lab by making Rueben Sandwich.

**2. Specify the process for making cultured foods (i.e. dairy foods).**

- Make Cheese
- Make buttermilk
- Relate the economic impact of food spoilage in underdeveloped countries.

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**F. FOOD PROCESSING AND PRESERVATION**

**1. Compare food-processing methods.**

- Compare the taste of orange juice in different types of packaging, example juice box, paper carton, and plastic container.
- Can different foods like tomatoes, peaches, or whatever is in season.

**2. Determine the appropriate processing methods for popular food items.**

- Field trip to a food process plant

**3. Evaluate various methods of preservation: dehydration, freezing, canning, fermenting, and irradiation.**

- Construct a model of how the various forms of food preservation interrelate.
- Determine the best method of preservation by taking one food through several preservation methods.

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**G. FOOD SAFETY**

**1. Identify the epidemiological studies associated with life experiences.**

- Debate the risks and benefits of using pesticides to produce foods.
- Identify the risks and/or threats to the world's food supply.

**2. Relate the risks and/or threats to the world's food supply.**

- Activity – Recommend potential remedies for those threats/risks.
- Evaluate the process of inspecting a food facility for safe sanitation practices.
- Assess the impact of biotechnology/recombinant DNA on human health and wellness.
- List the economic and ethical advantages and disadvantages of using biotechnology to produce, process, and preserve food products.

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**H. DEVELOPMENT**

- 1. Produce an original product, technique, or process that might be used in the food industry.**
  - Using Food Science and Dietetics Standards, produce an original product, technique, or process that might be used in the food industry.



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**I. CAREERS IN FOOD SCIENCE**

- 1. Research career paths within food science, dietetics, and nutrition.**
  - Create a brochure on different career paths
- 2. Integrate knowledge, skills, and practices required for careers in food sciences.**
  - Create a career portfolio using showcase work from food science activities
  - Course exit interview
  - Present the product created to a group of potential buyers/investors.